

CLAIMS

1. Process for obtaining a thin layer made of a first material (17, 37) on a substrate made of a second material called the final substrate (20, 40),
5 including the following steps:

- bonding a thick layer of a first material (13, 33) by one of its main faces on the final substrate (20, 40) at an interface,

- implantation of gaseous species in the
10 thick layer of first material (13, 33) to create a weakened zone (16, 36) delimiting said thin layer (17, 37) between the interface and the weakened zone,

- deposit a layer of third material called the self-supporting layer (1, 2) on the free face (15)
15 of the thick layer made of first material (13, 33),

- fracture within the structure composed of the final substrate (20, 40), the thick layer of first material (13, 33) and the layer of third material (1, 2), at the weakened zone (16, 36) to supply the
20 substrate supporting said thin layer.

2. Process according to claim 1, characterised in that the gaseous species are implanted in the thick layer of first material (13, 33) by one or
25 several implantations of identical or different gaseous species.

3. Process according to claim 2, characterised in that said gaseous species are chosen
30 from among hydrogen and helium.

4. Process according to claim 1, characterised in that the thick layer of first material (13, 33) is a layer delimited in an initial substrate (10, 30) during a gaseous species implantation step to
5 create a weakened zone (12, 32) in the initial substrate, a fracture step between the thick layer of first material (13, 33) and the remainder (14, 34) of the initial substrate being done after the step of bonding the thick layer of first material (13, 33) onto
10 the final substrate (20, 40).

5. Process according to claim 4, characterised in that the implantation of gaseous species in the initial substrate is an implantation of
15 hydrogen ions.

6. Process according to claim 4, characterised in that the step to implant gaseous species in the thick layer of first material (13) is
20 done after the fracture between the thick layer of first material and the remainder (14) of the initial substrate.

7. Process according to claim 4,
25 characterised in that the step to implant gaseous species in the thick layer of first material (33) is done before the step to bond the thick layer of first material on the final substrate (40).

30 8. Process according to claim 7, characterised in that the fracture steps are done by a

heat treatment, the steps to implant gaseous species are done under conditions such that the fracture between the thick layer of first material (33) and the remainder (34) of the initial substrate (30) is
5 obtained at a temperature less than the fracture temperature of said structure.

9. Process according to any one of claims 1 to 7, characterised in that the thick layer of first
10 material (13, 33) is bonded on the final substrate (20, 40) by molecular bonding.

10. Process according to claim 1, characterised in that part of the self-supporting layer
15 (1) is deposited, and the gaseous species are implanted in the thick layer of first material (13) after this partial deposit.